White Paper:
A New Economy Strategy for the Twin Cities Region

This paper was authored for the McKnight Foundation by Candace Campbell, principal of CDC Associates, a knowledge management firm that works with public and private clients regionally and globally to understand and respond to economic opportunities. She is also Adjunct Associate and Instructor of the Hubert H. Humphrey Institute of Public Affairs of the University of Minnesota.

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On August 16, 2000, the McKnight Foundation, with the assistance of the Great North Alliance, convened two select groups each of about 15 community and business leaders, economists, investors, and others with regional insight and global vision for an informal discussion on Minnesota's competitiveness. The discussion focused on the critical issues to be considered at the fall Economic Summit on Minnesota's economy and potential actions and responsibilities following from there. The discussion centered on prioritizing those factors most critical or fundamental to sustaining our global competitiveness. It also suggested steps we might take as citizen and institutional leaders to promote future prosperity and a superior quality of life for all Minnesotans. Participants were provided a copy of the following white paper in advance of the meetings as a starting point for our discussion.

The McKnight Foundation invites others to review these documents and engage in the dialogue and follow-on activities for positioning Minnesota's economy for the future.

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Executive Summary

1. Why a regional strategy for the New Economy?

We live in a time of continuous change. Regions with the ability to understand, anticipate and prepare for alternative future scenarios are rewarded in the New Economy. Strategic actions will improve the prospect for the Twin Cities to be globally competitive in the New Economy.

The purpose of this paper is to ask the right questions and engage the right people in a common understanding of how to improve the likelihood for impact and sustained change. As initial steps in a process of strategy-making our region's leaders need to review assessments of the region, consider opportunities, choose priorities, and define roles and responsibilities for action.

2. The New Economy is different from the old economy

The New Economy comprises both a new set of emerging industries and businesses that are based on revolutions in information technology, materials science and genomics as well as a new set of conditions that drive the business process – global competition, rapid commercialization, excellence as a standard and so on. Advances in the new economy depend on increasing productivity through the application of technology. There is a premium for knowledge and for places where knowledge workers choose to live.

3. Principles underlying any New Economy strategy

High-tech, high growth specialization versus diversity. Attention to building critical mass and hyper competitive concentrations in technology and innovation rich industry is considered the high reward strategy.

Excellence as the standard. Achieving continuous improvement and "world-class" standards are the norm in the new economy.

Investment versus consumption. Successful regions are making key investments in systems, which will ensure cutting edge telecommunication technologies, efficient transportation systems and critical mass of technology specialization for the future.

Urban and rural development is not an "either /or" proposition. Regions are increasingly dependent on the critical mass of technological specialization which is most often found in metropolitan high-technology production centers or "tech poles" to lead the global race.

Smart growth versus sprawl. Land use efficiency, more green space, and orderly development patterns appeal to knowledge workers and reduce infrastructure costs, congestion and pollution.

Aggressive leadership versus passivity. In a region devoid of broad-based leadership with a bold strategy or direction, indifference reigns. Georgia staked its claim on being among the top five high technology economies by the year 2010, while Chicago wants to be the most desirable place to live in 2020. Bold aspirations attract followers.

Place still matters. Act regionally. The New Economy happens in places. It is where the global works gets done and where important decisions are made. The interdependence of core cities with a broader region is emphasized when offering global enterprises a supportive business infrastructure, talented workforce, a culture of innovation and continuous change, and quality of life. Maintaining a competitive position requires constant vigilance. Roles and responsibilities for action lie in all realms – public, private and civic.

4. Rankings: The uses of indicators and benchmarks

Measures can help us to know our proximity to "superiority," to being above average, and to knowing or defining "world class". They are also helpful to build understanding, civic engagement, and consensus for change. But indicators, benchmarks and measures alone do not provide guidance in attaining or achieving strategic objectives. Getting the questions and the people right is essential. Key measures or indicators must be selected for their relevance to unique features of an area and its chosen strategy. The most promising use of quantitative measures of a regional economy is as performance indicators, once a strategy has been devised and implemented. Strategy

should inform our actions and measures should reflect out strategy.

5. What is being measured and why?

Several noted national organizations have developed frameworks for understanding and measuring success in the new economy. Keys to global competitiveness include an ability to improve productivity and capture more value-added within a specific region. A propensity for innovation and concentration of high technology, knowledge workers, entrepreneurship, global trade, and telecommunications infrastructure and use are also important.

Their metrics include employment and output in high tech industries, labor and expenditures in research and development, higher education expenditures, rates of business start-ups, venture capital availability and initial public offerings (IPOs). They also use analysis of industry clusters to determine trends in competitiveness of highly concentrated, growing sectors of the local economy and their supporting businesses.

Region by region measures of rank and indicators of change have been undertaken using a variety of readily available data sources (see Appendix B). Their metrics are in the realms of economy, human talent, government service, livability or quality of life, leadership, innovation/ entrepreneurship, technology, social equity and accountability. In most but not all regions, strategic actions have emerged from these assessments.

6. What have other places done to craft their strategies?

A recent report of the National Governor's Association outlines key element of state's strategies for the New Economy:

- *Re-engineer state government*
- *Build intellectual and physical infrastructure*
- *Reshape state's economic environment*

Many states like Pennsylvania, Massachusetts, Illinois and New York have recently made strategic choices and implemented major initiatives in industry-university partnership for research and development, technology commercialization, support for science and technology research, education and training;

venture capital and entrepreneurial support; workforce development and raising performance of K-12 systems.

Metropolitan regions have also begun to analyze their positions and create strategies for improvement. The Alliance for regional leadership looking at regional initiatives across the US found that their strategies centered on four topics:

- Preparing for the new economy
- Creating a livable community
- Including everyone in the region in the process
- Reforming governing analysis and strategy development

Their strategies promote technology adoption, research and development, new business starts and growth "smarts". Their sponsors and participants include business – old and new, supportive industries, educational institutions, financial institutions, foundations, government, and civic organizations. According to the ARL, their tactics to engage people in the conversation include "indicators, surveys, community town hall meetings, visualization, scenarios, and simulations."

There is a great deal in common among regions in their selection of tactics, measures, strategies and programs. But each region is transitioning to the new economy at a different pace and with different priorities.

7. Implications for the Twin Cities region

We are not new regional approaches, but we don't yet have a strategy. We need leadership and collaboration to devise and implement one. Out strategy can consider future scenarios and responses to change and new opportunities so that we can respond to the following issues:

Shall we build or specialties or maintain diversity, or both?
What is our role as a center of corporate headquarters, branch plants or locally owned small businesses? How shall we define our region or reach (metropolitan area, the state, the upper Midwest)? Shall we include the Prairie Provinces? And how will is change for each issue considered? How will we define quality of life? How will we ground our competitive advantages for the future? What government reforms are needed? On which possible new initiatives or key investments shall we focus?

A review of recent studies has identified seven key areas for action:

- ***Strategy and Leadership***- form a cross sectoral leadership group
- ***Knowledge Economy-*** make strategic investments in increasing quality of University of Minnesota as a leading research and educational institution build on investments in life sciences,
- ***Entrepreneurial Economy***– enhance entrepreneurial support – business incubators, seed and venture capital and start-up financing and assistance
- ***Workforce Development***– improve performance of K-12 system, build better industry education partnerships, offer scholarships for high demand or emerging occupations, create mechanisms for life-long learning.
- ***Infrastructure Investments***- adopt smart growth policies, build state-of –the –art telecommunications infrastructure and systems, invest in quality facilities for intermodal and multi-modal goods movement.
- ***Business Climate*** - reform taxes and regulatory systems to reflect new economy and industry (property taxes, R & D tax credits, capital gains reforms, regulatory streamlining)
- ***Quality of Life***– cultural and recreational amenities, living wages and affordable housing

8. A process for building our New Economy strategy

1) Assessment: Strengths, Weaknesses, and Opportunities
2) Make Informed Strategic Choices
3) Take Speedy, Concerted Actions
4) Review Performance Adjust Strategy With Tracking System

9. A framework of key strategic elements

This offers a visual device for organizing strategic elements. A matrix of seven key elements along one side and assigning roles and responsibilities among sectors: public, private, non-profit, and cross-sectoral is provided.

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Why a regional strategy for the New Economy?

Opportunities abound in the new economy. How to identify and succeed with these opportunities requires new thinking and new action. To transition from the old economy to the new economy takes an ability to manage change, at an ever-increasing pace. The drivers of the new economy are technology, productivity, risk-taking, scale, quality and timing. The new economy rewards those with an ability to continually be the "biggest, best and soonest" in the global marketplace. Conditions of continuous change requiring the ability to anticipate change and to be prepared for alternative future scenarios will prevail.

Our policies need to reflect our understanding of what drives the new economy and how it differs from the old economy. A successful transition both for individual businesses and for regional economies requires:

- strategy rather than ad hoc actions,
- information sharing, an open collaborative process, and
- accountability.

This white paper's purpose is to guide our region's leaders in a process of strategy making. In this process we try to ask the right questions and engage the right people to move ideas and discussion to action. This is based on the following hypothesis:

> **Hypothesis 1:** A region's competitiveness is increased by e*ngaging its leaders in process of designing and implementing a strategy for its future,*

Our appetite for public policy analysis and discourse can not compete with the increased demands on our time and intellects from business and family. This is especially true when the purpose of the exercise is unclear and the outcomes are murky. Reluctance to participate sometimes comes from the fact that participants – both institutions and citizens -- are found at all levels of maturation in the public opinion cycle – from "dawning awareness" to "considered judgement." Our goal in the year 2000 is to bring willing participants to a common understanding and to craft a strategy that will improve the likelihood for impact and sustained change. Our

The author would like to acknowledge the ideas, information, inspiration and assistance of the following people in the preparation of this report: Rip Rapson, Lyle Wray, Doug Petty, Ann Kirby McGill, Tom Veblen, Randy Olson, David Jennings, Chuck Neerland, Fred Zimmerman and Thea Pratt.

purpose is to choose priority areas and define roles and responsibilities for action. The key question is:

> ***What are the next, best things to do, by whom and with what expected result?***

Although many will claim that there has been too much analysis of the economy's strengths and weaknesses and the public and private sectors' capacities for improvement. A few recognize that only through continuous monitoring can strategy be appropriately devised and implemented. It is puzzling that in a region with more elected officials and governmental entities than most, we have been reluctant to nest any strategy for the economy in any one public agency, quasi-public board or a collaboration of thereof since the mid-1980s. Yet experts claim substantial efficiencies can be gained from having identical or coordinated policies and regulations – a strategy – across a region.

At least part of the success of other regions is their ability to articulate and communicate an image beyond a headline like: "***Current Prosperity, Slow Decline in Rankings, Slight Holes in Future's Silver Lining."*** The Twin Cities was once known as a major high tech community – computer center, supercomputer manufacturing, leader in medical devices, top research university, home of innovation based 3M, and so on. These leading institutions and industries were magnets for talent, capital and opportunity.

As we transition to the new economy our self-image and the people who will share it in the future are changing. Whether that image is simply a reflection of today's business community or the result of a lack of a shared strategy could be open for debate. Regardless, our own press is not as compelling as it once was. Despite a number of studies and initiatives, we have yet to devise and implement a bold strategy for the future of our region's economy.

The New Economy Is Different From The Old Economy

The New Economy comprises both a new set of emerging industries and businesses that are based on revolutions in information technology, materials science and genomics as well as a new set of conditions that drive the business process – global competition, rapid commercialization, excellence as a standard and so on. We are in the midst of a transition from one way of thinking and operating in the world to another. We are changing from an economy which values human talent as much or more than extractive resources. This is happening in a marketplace of global "connectedness" and in a period of accelerating rapidity of ideas and innovations from the lab or bench to the marketplace. There is a premium for knowledge and for places where knowledge workers choose to live.

No advanced economy can maintain high wages and living standards, and hold its own in global markets, by producing standard products using standard methods.

(Porter and Stern, 1999. P. 5)

OLD Thinking	*NEW Thinking*
Industrial economy	Knowledge economy
Regional and national market reach	Global competition
Infrastructure consumption – cost matters	Infrastructure investment – performance/ quality matters
Hierarchies – vertical integration	Networks – distributed systems
Predictable cycles	Rapid change – Internet time – 24/7/365
Invisible Hand – Resource driven, Market Oriented	Critical mass – technology specialization – Market leadership
Local power and control	Collaboration – regional alliances
Average as standard	Excellence as standard
Periodic quality checks	Continuous Improvement
Urban - rural dichotomy	Tech poles and regional integration/influence
Sprawl	Smart growth
Location	Destination

The New Economy values:

- ***Economic regions**, which provide a habitat for clustering*
- ***Distinctive quality of life**, which attracts knowledge workers*
- ***Vital centers**, which offer lively amenities and opportunities for interaction*
- ***Choice for living and working**, which acknowledges increasing diversity of career and life paths*
- ***Speed and adaptability**, which allow quick access to decisions and resources*
- ***The natural environment** as an important and compatible element of community.*

(Henton and Walesh, 1998, p.12)

Principles underlying any New Economy strategy:

High-tech, high growth specialization versus diversity. Attention to building critical mass and hyper competitive concentrations in technology and innovation rich industry is considered the high reward strategy. Thresholds for business investment and market leadership are ramping up – this drives the need to create networks and collaborations to gain critical mass.

Excellence as the standard. To be world-class or even regionally competitive, customers expect the highest quality of products, services and support. Achieving continuous improvement and world-class standards are the norm in the new economy.

Investment versus consumption. Avoiding major investments in high-ticket items such as transportation systems or capital investments in research and development facilities in favor of less spending is not a competitive strategy. Successful regions are making key investments in systems, which will ensure cutting edge telecommunication technologies, efficient transportation systems and critical mass of technology specialization for the future.

Accepting that in Minnesota, as elsewhere, ***urban and rural development is not an "either/ or" proposition***. Regions are increasingly dependent on the critical mass of technological specialization which is most often found in metropolitan high-technology production centers or "tech poles" to lead the global race. Leadership in the global economy will require an understanding of the interdependence of the Twin Cities metropolitan area and the state's non-metropolitan regions (or even those of the larger geographic region including the Dakotas, Manitoba, Northern Iowa and Western Wisconsin).

Smart growth versus sprawl. Regions are learning that efficient use of land can lead to fewer dollars devoted to transportation and public service infrastructure, and yield more green open spaces and more appealing and functional communities.

Aggressive leadership versus passivity. There may be a self-fulfilling prophecy about reading your own press (especially when you have written it) that you begin to believe what you read. It is unfortunate that the attribute of smugness and

complacency among business and community leaders has persisted for nearly a decade. The region's crisis of confidence in its ability to solve problems and to get ahead of the curve is probably greater than our real capacity to define and understand the issues, and then craft a shared approach to their solution. In a region devoid of broad-based leadership with a bold strategy or direction, indifference reigns. Georgia staked its claim on being among the top five high technology economies by the year 2010, while Chicago wants to be the most desirable place to live in 2020. Bold aspirations attract followers.

Place still matters. Act regionally. Just when the world seems close to being fully globalized with open markets, instantaneous information access and sharing, highly developed telecommunication, finance, commerce and transportation systems -- there is a surge in interest and research in economic geography. Place still matters. Despite global access and integration, the importance of place is elevated in decisions about where goods and services are produced and where people with talent and capital to produce them will live. The success requirements for places have changed. In the race to offer "the best" – or to become one of the highest quality, even "world class" places, communities emphasize supportive business infrastructure, talented workforce, a culture of innovation and continuous change, and quality of life.

The New Economy happens in places. It is where the global works gets done and where important decisions are made. The interdependence of core cities with a broader region are emphasized when offering global enterprises a supportive business infrastructure, talented workforce, a culture of innovation and continuous change, and quality of life. While proximity and access to commercial centers, residential areas and urban amenities are important – jurisdictions are not. Just as businesses and economic activity are being reshaped through downsizing, outsourcing, mergers, and acquisitions, alliances, collaborations, distributed networks, there is a need to redefine government – its structure and its delivery systems – toward transparent borders.

The irony is that easier access can also mean easier isolation. The stakes are higher and the competition among places is greater. Being first or in the front of the pack helps, but maintaining a competitive position requires constant vigilance. Roles and responsibilities for action lie in all realms – public, private and civic.

The new economy has eight important characteristics that all of us must bear in mind as we think about how to adjust

1. ***Technology is a given***
2. ***Globalism is here to stay***
3. ***Knowledge builds wealth***
4. ***People are the most important raw material***
5. ***There's no such thing as a smooth ride***
6. ***Competition is relentless***
7. ***Alliances are the way to get things done***
8. ***Place still matters, but for different reasons***

(Waits and Hall, p.7)

Rankings: The uses of indicators and benchmarks

Using indicators to understand our position and our progress. Gone are the days when the major source of pride of a community was the record of the high school or even professional sports teams. The digital age allows us to create "a metric" for every aspect of our complex modern lives – with daily, monthly, quarterly or yearly reports and rolling averages. We can compare ourselves on any number of measures with a portfolio of our peers indexed for change over time and geography. Regional analysis -- including identifying industry clusters, benchmarking, and monitoring performance -- is all the rage today. Most states and many major and minor cities and regions are doing it. A number are outlined in this paper and summarized in Appendix B.

Community leaders in the Twin Cities have established a tradition of self-assessment. Although it is not part of the culture to boast, there is a certain pride and blind acceptance to Garrison Keillor's notion that we live in a place where everything is "above average." There is also certain disdain for the idea that the Great North Alliance could possibly rate the region as a "C-."

The paradox is that the power of numbers can mask their purpose or meaning. Qualitative measures while less accessible can be more important. The difference is in how the assets are deployed. Anna Lee Saxenian, professor and author of ***Regional Advantage,*** says, "it's not the ingredients but the recipe" that matters. Further, clarity of purpose and use of these measures is paramount.

Why look at comparative measures? We seek to better understand ourselves – our position – trends – strengths – weaknesses. These measures can also help us to know our proximity to "superiority," to being above average, and to knowing or defining "world class". They are also helpful to build understanding, civic engagement, and consensus for change. There is value in the process of comparison; it comes during the period of gaining understanding and defining common ground. Indeed, the policy cycle requires annual or periodic visits to same or similar ground. Terms of office and community leadership change regularly – therefore we need to rebuild understanding, purpose and commitment. We also need to recognize that without indications of progress or achievements, fatigue sets in. But indicators, benchmarks and

measures alone do not provide guidance in attaining or achieving strategic objectives. Getting the questions and the people right is essential.

Where Do We Want To Go? Using Benchmarking to Craft A Strategy for Improvement. The majority of the regional analyses were undertaken within a context of learning how to improve their positions and/or how to define strategies to achieve specific goals (which requires leadership/commitment). Simply choosing the same measures or metrics as another community may be informative but it is not strategic. Graham Toft, among other practitioners, suggests that key measures or indicators must be selected for relevance to unique features of an area and its chosen strategy. Further experts suggest that measures should be normalized (using per capita comparisons) and reviewed over many years, employing moving averages rather than snap shots reporting nominal or percentage changes from one prior period and indexed to show performance vis a vis benchmarks.

A strategic approach to rebuilding our industry will involve focus and constant measurement to ensure we are moving in the right direction. It will not do for us to concentrate our efforts on casinos, shopping malls, office buildings and sports facilities if we are expecting to remain an industrial power.

(Fred Zimmerman, 1995. P.105)

Searching for examples of excellence and defining the class and the best of class from region to region or institution to institution is helpful. The best lessons from benchmarking often come from organizations in a completely different line of work. The practice of benchmarking is designed for improving processes not products. Benchmarking is an interactive endeavor meant to help organizations learn from the best practices of others how to improve their own processes. It is difficult to say whether its application to a regional economy can improve the product: profits and incomes. Using numbers from secondary sources can help to track competitive positions and inform some collective and public actions. Some regions, like Seattle, organize regular visits to competing regions around the world to observe and learn from them directly.

The most promising use of quantitative measures of a regional economy is as performance indicators, once a strategy has been devised and implemented. An interesting aspect of the digital age is that regions, businesses and governments are now much more willing to produce and share regular quantitative reports on outcomes and changes. The performance-based public and private enterprise is now *de rigueur.*

There are some other important pitfalls to avoid in using such measures. Metrics don't always track with perceptions – so they are not reliable measure in and of themselves. Sometimes there is a spurious relationship between cause and

effect, especially when dealing with something as complex as a regional economy. They can also serve as harbingers of doom and gloom – like the story of Chicken Little after a fashion there may be no mechanism to respond to the bad news. Finally, such measures can masks the finer points both good and bad. For example, the Detroit regional economy rates well but its inner city still has huge problems.

Numbers are a necessary but not sufficient condition. Strategies for change require action. Action requires leadership and followership. Strategy should inform our actions. Measures should reflect our strategy.

What is being measured and why?

Several noted national organizations have developed frameworks for understanding and measuring success or precursors to success in the new economy. Keys to global competitiveness include improving productivity and capturing more of the value-added within a specific region. The Council on Competitiveness studies these factors in a global context. They point to the decline in U.S rank relative to other nations of our ability to innovate -- a key driver in the new economy.

The Milken Institute evaluated the growth of economies among metropolitan areas in the U.S. and found high technology to be the impetus for their success. They ranked the 50 top high technology metro areas or "tech poles." Minnesota had several mentions but none in the top group of growth in technology.

Top 50 High-Tech Metros, by Concentration	**Rochester, MN ranked # 1**
Top 25 High-Tech Manufacturing Metros, by Concentration	**Rochester, MN ranked # 1**
Top Ten High-Tech Industry Metros, by Concentration Computers & Office Equipment	**Rochester MN ranked # 1**
Top 50 High-Tech Metros, by Size	**Minneapolis-St. Paul, MN-WI ranked #11**
Top 50 Milken Institute Tech Poles	**Minneapolis-St. Paul, MN-WI ranked #32**
Top 50 High-Tech Metros, by Growth	**Grand Forks, ND-MN ranked #37**
Top 50 High-Tech Metros, adjusted by relative growth Index	**Rochester, MN ranked #4**
Change in High-Tech Manufacturing concentration from 1978-1998	**Duluth-Superior, MN-WI ranked #12 in positive change** **Rochester, MN ranked #20 from top in negative change**
Metros most sensitive to High-Tech Recession	**Rochester, MN #1** **LaCrosse, WI-MN #8**

Just as successful companies develop and sustain core competencies, regions develop niches where they can sustain competitive advantage by investing in talent, technology and specialized infrastructure.

(James Irvine Foundation, p. 20)

The Milken Institute found that high tech firms want places with:

- access to a trained workforce,
- close proximity to research institutions,
- a network of suppliers,
- access to venture capital and
- a good quality of life.

Organization	Council on Competitiveness	Milken Institute	Corporation for Enterprise Development	Progressive Policy Institute
Focus:	Innovation Index – national performance	High-Tech in Metropolitan Areas	*Report Card*: Economic performance	New Economy Index
Measures/ elements:	•Labor force devoted to R & D and technical work •Amount of investment directed at R & D •Resources devoted to higher education •National policy to encourage innovation and commercialization	• Tech Poles • High Tech (HT) Output • HT Output Growth • High Tech Concentration	• Performance • Business Vitality • Development Capacity	• Knowledge Jobs • Globalization • Economic Dynamism • Digital Economy • Innovation Capacity

Minnesota's ratings from the Massachusetts Technology Collaborative Index, the Corporation for Enterprise Development and the Progressive Policy are included in Appendix C.

Technology is ubiquitous – it is embedded in every business's future. It appears that possessing elements of technology rich place is a pre-condition or co-condition to economic prosperity. Knowledge content of a place and its people is a key determinant of its value or potential for return on investment. The spectrum of mechanisms for knowledge development and growth from innovation and technology ranges from:

- improving formal education (K-12 and higher education),
- investing in high skills technical training,
- supporting basic and applied research,
- encouraging more industry – academic cooperation,
- encouraging the development of industry and trade associations
- capturing a sufficient amount of industry or cluster concentration in the local market to create hyper-competitive conditions.

The unit of analysis and focus is now industrial clusters rather than industry sectors. "Clusters are concentrations in one place of competing, complementary and interdependent firms and industries that create wealth, export and share needs for common talent, technology and other resources."[1] The more interaction and interdependency the better. Regions are betting on the success of their clusters as their competitive advantage.

Metrics for regional analysis – (exemplary measures)	
Economy	Structure, composition, growth and change of business performance and personal income and wealth; globalization: exports
Talent	Population composition, characteristics, skills, educational attainment, algebra enrollments, 3rd grade reading competency, SAT scores, growth and change
Government services	Education, R & D, public services – transportation, local government
Livability /Quality of Life	Pollution, congestion, recreation, arts, culture, civic institutions, land use, growth management, environmental quality, health, crime
Leadership, Civic Culture, Social Capital	Commitment to excellence, accountability, risk-taking, generating and embracing new ideas, encouraging interaction among people and networks
Innovation/ Entrepreneurship	Business starts/deaths, gazelles (>20% revenue growth annually for 4 consecutive years), venture capital investments, IPOs, mergers and acquisitions,
Technology	R & D investments, technology disclosures, patents, dot.com domain names, high tech workforce, scientist and engineers, internet use and availability
Equity Issues	Income disparities, affordable housing
Accountability	Economic and program performance monitoring and reporting

(Source: CDC ASSOCIATES based on review of studies listed in the report's sources.)

Interestingly, many regions, particularly those in the top of the ranked lists have voiced concern for equity issues – the problems of the "haves & have-nots", housing affordability, health, crime. There is a growing realization that economic prosperity that is derived from places with a higher quality of life depends on sharing the wealth more broadly.

[1] (Waits and Hall, p.28)

What other places have learned and what they have done to craft their strategies?

Innovation involves far more than just science and technology. The four determinants are the presence of high-quality and specialized inputs (high quality human resources, trained, expert scientific, technical and managerial staff; frontier research relevant to industry issues; and an effective system for communicating best practices and transferring knowledge), a context that encourages investment and intense local rivalry pressure and insight gained from home demand, and the presence of a cluster of related and supporting industries.

(Porter and Stern, p.18)

The National Governors' Association's report, **State Strategies for the New Economy,** suggests an outline for state strategies:

- ***Re-engineer state government:*** decentralize, create public-private partnerships for problem solving and service delivery, privatize services and where possible use technology to improve and transform service delivery.
- ***Build intellectual and physical infrastructure***: early childhood and K-12 education, invest in and refocus higher education, support workforce training for high skills, high wage jobs, R & D as a magnet for talent and promoter of technology transfer and telecommunications transportation to support growth.
- ***Reshape state's economic environment:*** tax and regulatory reform to facilitate business expansions, support business start-ups through incubation centers, investment capital, tax incentives/reform, and attend to quality of life.

Many of these themes are repeated in specific state and local strategy initiatives (see the accompanying matrix of examples). While the scope and focus of regional analysis and strategy appears more similar from place to place, the strategy-making process and their implementation takes place in a wide variety of forms. Some are headed by governors who have a unique ability to bring together business, academia, citizens and legislators to take on bold new initiatives.

Pennsylvania, famous for its innovative policy leadership in the 1980s with the creation of the Ben Franklin Partnership, recently empanelled an industry led commission to create a new strategy for the first time in 15 years. The Tech 21 calls for action and investment by state and quasi state agencies, universities, non-profits and industry and a series of legislative proposals. It was presented after a two-year development process. Their benchmarks included regions with a track record for technology strategy implementation: Singapore, India, Ireland and Israel as well as leading US regions like North Carolina's Research Triangle, Boston's Route 128 and Silicon Valley.

Massachusetts created its strategy and programs under an umbrella of a state agency with a multi-sector oversight board; it conducts annual reviews of indicators to assess its progress.

Arizona's Governor Hull created a 35 member Partnership for the New Economy with a broad-based outreach strategy which is to report its strategic recommendations in October 2000.

Other states have forged ahead with major initiatives such as Illinois' $1.9 billion Venture Tech five year package for science an technology; Michigan's $1 billion, 20 year commitment for life science research, development and commercialization; and New York's $130 million New York Office of Science, Technology and Academic Research (NYSTAR) funding for projects including funds for venture capital, retraining and water supply infrastructure, faculty development, research capital facilities for laboratory space, technology transfer incentives, and expanded Centers for Advanced Technology.

Metropolitan regional strategies have been sponsored by industry associations, chambers of commerce and business leadership groups and through formation of special focus, cross-sectoral networks or organizations. Generally participants are those individuals or institutions with a strong commitment to the future of their place. This includes leadership by new economy entrepreneurs as evidenced in Austin, Texas.

A summary of the Alliance for Regional Leadership's (ARL) May 2000 forum of people from more than a dozen regions across the U.S. suggests that regional stewards – those business and institutional leaders, citizens and special interest groups with a commitment to place – are really engaged in four conversations:

New Economy:	how to prepare people and places to succeed in the New Economy
Livable Community:	how to create great places to live and work
Community-based Regionalism:	how to ensure everyone is included
Government Reform:	how to ensure that government is effective and responsive.

Some regions tend to emphasize improving the economy while others seek to protect the environment – most often strategies include both. Region's strategies call for actions to promote technology adoption, research and development, new business starts and growth "smarts". Their sponsors and participants include business – old and new, supportive industries, educational institutions, financial institutions, foundations, government, and civic organizations. According to the ARL,

Because of its reliance on technology, the new economy also depends more than its predecessors on research and development….The seeds for today's new economy were planted decades ago. Experts warn that even as the new economy has emerged, investment in the fundamentals of innovation capacity – research and development – has actually been flat or falling.

David Gergen U.S. News and World Report (March 29, 1999)

their tactics to engage people in the conversation include "indicators, surveys, community town hall meetings, visualization, scenarios, and simulations."

If you examine the matrix of regional strategies for the new economy, innovation and technology summarized in Appendix B, you will see that there is a great deal in common among regions in their selection of tactics, measures, strategies and programs. Each region is transitioning to the new economy at a different pace and with different priorities. The following are some unique aspects of some of these regional efforts.

Cleveland: Early to conduct analysis of their region by the Citizens League Research Institute, a non profit citizens organization, Cleveland is slow to adopt a regional strategy. Their goal was "to determine why competitors are ahead and use their approaches to help us catch up." They began in 1994 with first report, ***Rating the Region.*** They now produce annual reports on 114 indicators, comparing 25 cities on such areas as:

- Regional marketplace
- Infrastructure
- Labor Force
- Education
- Community
- Government
- Health
- Environment
- Amenities

Despite their early work, these rating have not translated into regional strategy or effort. Economic Development organizations worked with Cleveland State University to conduct an analysis of industry clusters in recent years, but no big plan has yet to emerge.

Chicago – chose to focus on a few key issues –such as broad band telecommunications and equity issues of economic disparity between inner city and suburban neighborhoods;

Silicon Valley is most concerned about maintaining and/or improving its quality of life and livability factors. This is reflect in their indicators – they track efficiency of land use for housing, the extent of transit oriented development construction; transit ridership and the ratio of new jobs to new houses constructed as well as birth weight of newborns.

Pittsburgh wants to enhance its entrepreneurial culture.

Austin wants to improve its quality of life and attractiveness to knowledge workers. Their effort was unique in that it was organized by a coalition of 300 high tech CEOs, many of who are the twenty and thirty somethings that make of the dot-com business community. Austin 360 / Austin Network has developed proposals to address roads, transportation, housing, and schools. At once of their meetings they adopted a Declaration of Interdependence stating "our inter-dependence is based on linking our new economy to our livable community."

Philadelphia is focused on raising its standing among medical education, research and related industries

Washington D.C. area including northern Virginia and western Maryland now has two regional efforts that are inter-linked. Organization ins the public private and non-profit sectors have not only joined forced to promote regional workforce development and the information and communication industry, but also to ensure that the District of Columbia maintains its ability to support the region in its infrastructure investments and capital facilities.

The thing we care about in cities cannot be resolved without looking beyond the arbitrary political jurisdictions we call cities. We want the five Es of sustainable cities: as strong Economy, a clean Environment, social Equity, quality Education, and civic Engagement. ..a city today is actually a complex system of overlapping, interrelating jurisdictions – a Net.

Camille Care Barnett, "Net Governance," Citistates Essay for April www.citistates.com/cshappen.html

Appropriate to the new economy no alliance is permanent. The best matches are fluid and elastic, changing as new opportunities and pressures arise. The secrets to success, expert say, is not just to align once but to do so over and over again to gain competitive advantage.

(Waits and Hall, p.26)

As we enter the age of human capital, where firms merely lease knowledge assets, firms' location decisions will be increasingly based on quality of life factors that are important to attracting and retaining this most vital economic asset.

(DeVol, p. 9)

Implications for the Twin Cities region

We need to understand our starting place – our unique position. For decades we were ahead of game in terms of having a regional view and organizations. Now is time to consider how to improve for the future. We are not first to the starting line and we are neither a beginner nor a master.

Leadership is required – collaboration among organizations, institutions, sectors – governor, agencies, non-profits, local governments. There can be a huge reward for smallest, but most important, increment of improvement. There needs to be courage to go that far and to focus on a few key elements of strategy.

If the mentality of "No Crisis – No Action" prevails, we can resign ourselves to a lesser future. If that were how business world or other major organizations operated we would not be among the most productive economies in the world. Timing is important and this is a critical period to invest for the future.

Diversity versus specialization -- what are our limits? our possible breadths and depths? We have had top positions in research and as a knowledge center in areas like computer science, medical technolgy, precision instruments, and adhesives. We have been a technology production center in manufacturing supercomputers, disk drives, and medical devices.

Lyle Wray's oft–cited quote of Wayne Gretzky about *"How do we skate to where the puck will be?"* is worth considering. What are some future scenarios for our economy and community? Consider the alternative impacts on food/agribusiness, medical devices or precision instruments or telecommunications, transportation equipment, banking, insurance, and business services if key changes in technology, big company ownership and local business presence should change.

Our high per capita income is the result of our fortune at being home to many large and small corporate HQ and knowledge economy companies. *What is the future of Fortune 500 here? What is the future of locally owned enterprise of any size?* Will a change influence how we value or invest in our quality of life? Our mix of talent? Or our philanthropic giving?

Many have cited that the Twin Cities are located 500 miles from the nearest population center. One region's marketplace

may be another region's hinterland and vice versa. How will we maintain a presence in national or world markets? How important are linkages? *What about our relationships with the broader region* – rural areas, the Dakotas, Manitoba, western Wisconsin, northern Iowa, or with competing or complimentary technology regions? Shall we begin a regional coalition or dialogues with surrounding states and provinces?

Who is here that has a commitment to place? Do we have the right people engaged in the conversation – usual suspects versus emerging industry voices (dot.coms, twenty or thirty somethings)?

How will we define quality of life in the Twin Cities context? As smart growth strategies? As reducing poverty and economic disparities? Or as building fail-safe resources for early childhood development and education?

What strategies will help to ground our competitive advantages? …recruiting tomorrow's workers as today's students? …investing in location preferred business and technologies?

What big government reforms are needed? Could we redefine regional governance in a New and Improved Met council? Or redefine community and technical colleges for the digital age?

On which possible new initiatives or key investments shall we focus?

- Basic research to commercialization in new areas like human genomics, materials science, software design, photonics.
- Excellence in K-12 and beyond with world-class technology training for post-secondary students
- Building digitally- soaked institutions
- Solidifying a culture of innovation
- Broadening business and community leadership

Governments are taking on the shape of the businesses that are driving their cities. The new economy relies on networks of suppliers, producers, attorneys, and financier. The new government is building networks of business and labor leaders, small governments and nonprofit institutions. The new government isn't an organization chart with descending boxes and arrows. It's more like a Web site, with multiple links and connections.

Bill Bishop "Austin's New Economy Outpacing its Old Government," Austin American-Statesman Saturday, February 26, 2000.

Common Ground from recent policy studies:

A number of thoughtful analyses of our goals, institutions and needs have been conducted over the last two decades. Some with recommendations as far reaching as "portable pensions" in the 1977 study on the Commission on Minnesota's Future. The efficacy of these efforts is mixed. Some of their recommendations have been transformed into realities, others have not.

Minnesota's recent history is rich in research and analysis of our economy, our industries, our business climate, our infrastructure, our technology and our government services. Among the goals stated in the 30-some reports reviewed for this paper are:

- Ensuring the Economic Health of Business and Workers
- Enhancing the Entrepreneurial Economy
- Business Climate
- Building the best supporting Infrastructure in Education/Research, Technology, Transportation, and Trade
- Improving the Quality of Life

Identifying common ground among recent policy recommendations they call for action in seven key areas:

- Strategy and Leadership
- Knowledge Economy
- Entrepreneurial Economy
- Workforce Development
- Infrastructure Investments
- Business Climate
- Quality of Life

Strategy and leadership
Devise and implement a strategy based on key industry clusters and/or leading technologies and regional approach. Form an independent group of business and government leaders to guide and monitor progress, to understand and manage changing economy, and changing business leadership.

Knowledge Economy
Make major strategic investments in increasing the quality of the University of Minnesota as leading research and educational institution – deepening its basic research centers of excellence in digital sciences (computer and information sciences), molecular and cellular biology (life sciences), new

media, and design; improving educational ranking in important fields, and enhancing technology commercialization efforts.

Entrepreneurial Economy

Support development/enhancement of entrepreneurial support infrastructure and network including business incubation centers, seed and venture capital, and access to business start-up financing and assistance.

Workforce development

Improve performance of K-12 education system and focus more of state university system facilities and curriculum, and state's training investments on business and industry needs and trends.

Create public and private scholarship programs for high demand occupations.

Craft creative mechanisms for workers to invest in life-long learning (401K type vehicle) and/or to aid in career transitions (health care and pension portability).

Infrastructure

Minimize need for future investments and maximize efficiency by adopting and promoting smart growth policies region-wide – compact, transit oriented development that maximize green open space and minimize travel.

Continue to invest in start-of the art telecommunications infrastructure and capabilities for use in government, public schools and among citizenry.

Invest in quality facilities for intermodal and multi-modal goods movement.

Business Climate

Tax reform surrounding commercial and industrial property, capital gains, and income taxes.

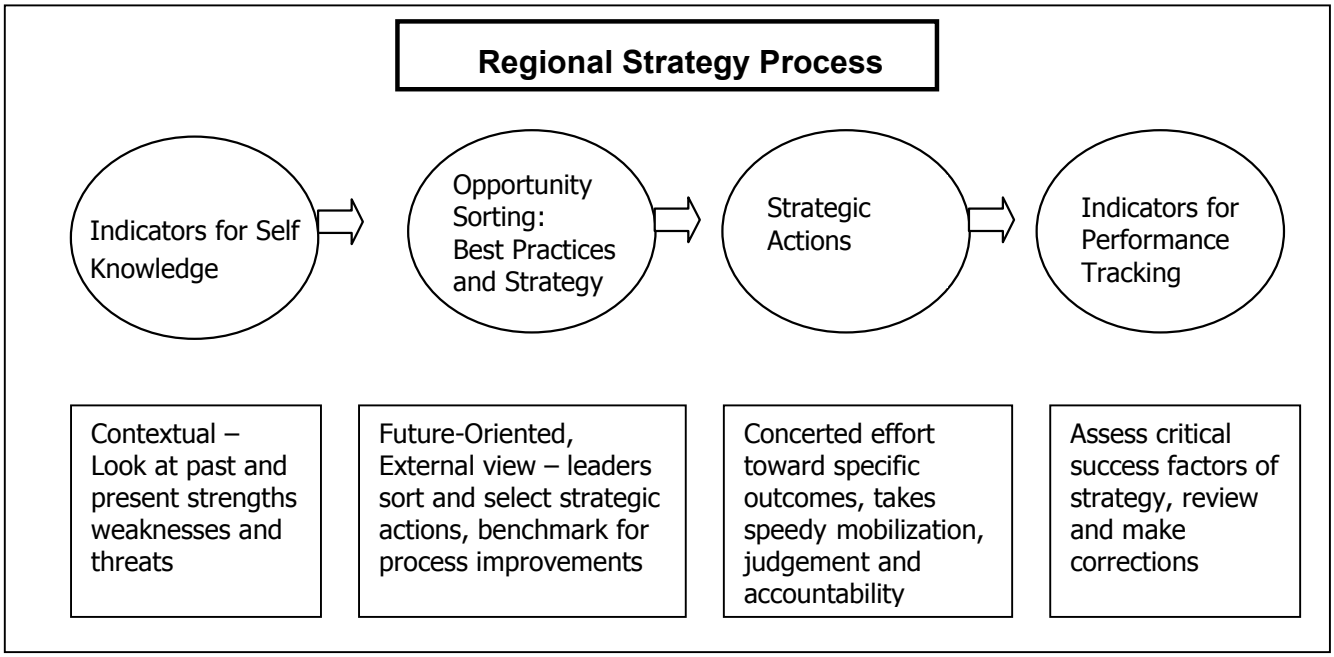
Regulatory streamlining at state and local level to improve customer satisfaction and policy outcomes and to reduce any disadvantages with competing states.

Quality of Life

Maintain, enhance and promote quality of life – cultural and recreational amenities, living wages and affordable housing.

A Process for Building Our New Economy Strategy

1. Assessment: Strengths, Weaknesses, and Opportunities
2. Make Informed Strategic Choices
3. Take Speedy, Concerted Actions
4. Review Performance Adjust Strategy With Tracking System



A Framework of Key Strategic Elements and Roles and Responsibilities

	Public	Private	Non-Profit	Cross Sectoral
Strategy and Leadership				
Knowledge Economy				
Entrepreneurial Economy				
Workforce Development				
Infrastructure Investments				
Business Climate				
Quality of Life				

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Appendix A:
Findings of other reports -- Recommendations & Ideas for Action

The Big Plan: Strategic Directions of the Ventura Administration. **Office of Governor Jesse Ventura, 2000.**
www.mainserver.state.mn/us/governor/the_big_plan.html (selected initiatives):

Minnesota, World Competitor
- International Trade promotion
- Agricultural competition – research and technology transfer
- Workforce for tomorrow – well trained, flexible and healthy
- Best Business Climate – high growth industries and high quality jobs, new entrepreneurs and enterprises
- Commercialization of New Technologies – to increase productivity and competitiveness – transfer research and technology
- Promote Tourism

Healthy Vital Communities
- K-12 Education: best in nation
- Rural economic development
- Smart Growth
- Affordable Housing
- Telecommunications as Economic Development
- Implement Information Highway

Self Sufficient People
- Lifelong learning
- Health care

Service, Not Systems
- Rein in excessive regulation
- Sensible tax system
- Engaged citizens – voting
- Electronic government

Dean David Kidwell, "Minnesota's Economy: 'Strong Buy' or 'Hold'?" Business Forum Star Tribune March 6, 2000.

Foster a high tech renaissance by:
1. Invest in cutting edge technologies – invest in university's research capabilities.
2. Invest in a high-technology incubator – commercialize technologies
3. Establish a regional high tech venture capital fund

Citizens League:

Securing Minnesota's Economic Future: A New Agenda for the New Economy. **Citizens League. 2000.**
From Jobs for Workers to Workers for Jobs. **Citizens League, 1999.**
Help Wanted: More Opportunities than People. **Minneapolis. Citizens League. 1998.**
Compete Globally, Thrive Locally**. Minneapolis: Citizens League, 1996.**

Prepare for New Economy:
Shift economic development strategies from job creation to improving productivity, working conditions and skill training, public transit support working families with housing, health care, and child care.

Agenda for New Economy:
- Define our state economic ***strategy*** – research, workforce and infrastructure investments
- Build a strong ***research and development*** presence Northstar Research Coalition
- Invest in a skilled and flexible ***workforce*** – World class K-14+, incumbent worker training
- Invest in high ***technology infrastructure*** – telecommunications

Short-term priorities:
- Create and ad hoc Metropolitan Economic Strategy Commission to assess the regional economic situation and develop a clear agenda for the Governor.
- Create the Northstar Research Coalition a private-public partnership to identify emerging areas of research and application and build strategic investments. Board of business leaders from key industries would oversee state funds matched with private dollars to endow chairs, invest in research and support key projects.
- Improve K-12 system – third grade reading and math levels are achieved during third grade and investment in English language instruction for immigrants and refugees.
- Invest in world-class, responsive post-secondary education and training – scholarships to promising high school students, tuition incentives for students in high demand fields, performance funding for state's community and technical colleges.
- Funds skills training for incumbent workers in key industry clusters.

The Great North Alliance, *Opportunity Forecast,* April 2000.
www.thegreatnorth.com

Analyzing a variety of indicators and comparing the Twin Cities' performance with that of Atlanta, Austin, Boston, Chicago, Denver, and Seattle the group found that the Twin Cites is lagging these high performing areas. They identified pressing needs as workforce development retention and attraction; reinvigorating research and development; and creating a climate that nurtures entrepreneurial energy. Their recommendations are as follows:

Workforce Development
Threat is our diminishing ability to meet the demand for high skilled workers.
- Challenge the private and non-profit sector to provide 2 or 4 year scholarships to post-secondary institutions for high school graduates.

- Target scholarship to high demand technical fields, target public and private higher education resources to most capable institutions.
- Waive out of state tuition for post secondary students in engineering and technical areas who agree to remain in Minnesota for five years after graduation.

Research
- Establish a partnership between the private sector Minnesota's research institutions and the state of Minnesota to channel investment into four high tech areas: digital science, cellular and molecular biology, multi-media and design.
- Endow teaching and research chairs to attract top faculty in selected engineering, science and technology fields.

They also lay claim to the ground or set of activities surrounding benchmarking the region's performance annually, providing leadership in developing solutions to problems and creating a civic mechanism to implement solutions.

Woodward, Lynn. *The Top High Technology Industries in Minnesota's Future.* Minnesota Futurists, 2000

Invest in cutting edge technology and a business incubator to transfer technological licenses to new businesses and investment public and private funds in venture capital for investment controlled in private sector in start-up businesses. Dr. Woodward conducted a modified Delphi study of Minnesota futurist to identify top high-tech industries in Minnesota future. The top five and their possible public research investment are:

1. Biotechnology – DNA, genome, drug and gene therapies, DNA computers) -- $150 million
2. Distance learning and high-tech education $100 million
3. In-body/On-body health monitoring or implants $80 million
4. New Energy (fuels, fuel cells, organic oil substitutes) $70 million
5. Nano-technology (sub-microscopic molecule assemblies of materials and micro-machines) $60 million

Minnesota Public Radio Civic Journalism Initiative, *Minnesota in the .Com Age, 2000.*
www.mpr.org

Both the state's economy and University of Minnesota have fallen behind and are now trying to play catch-up. "Governments of other states are a hundred times hipper to the dot-com revolution than the one here." Optimistic about Minnesota high tech future need for coherent, organized strategies to nourish seedling companies – "lack of focused effort in helping to develop both the entrepreneur and the ideas." Drew upon studies and expertise of Milken Institute and the Progressive Policy Institute to learn that none of the Minnesota cities (Twin Cities, Rochester or Duluth) rank in top 50 in terms of high tech growth. Twin Cities is leader in Midwest among software, Internet-related developments in past 3 years. Court of the PPI pointed out the state has an educated workforce, high percentage of workers in office building and in managerial

and professional jobs, high percentage of population online, leader in adopting technology in schools, state uses technology better than most states, strong orientation toward research and development by industry and relatively large amount of venture capital. Weaknesses: middle of the pack in terms of numbers scientists and engineers, dot com names registered, few high growth "gazelle" companies, relatively static economy – little "churn" – the rate at which new businesses are starting up and replacing existing companies.

Recommendations:

- Increase investment in science and engineering at the university level
- Support commercialization of innovation through efforts to link university with industry
- Use University's excellence in information technology as marketing tool for the rest of the country to attract talent
- Help educators in science and math in K-12 keep up-to-date
- Aggressively recruit science and math students from around the country
- Endow chairs at the university
- Support R & D at university
- Explore creative use of pension funds for high tech start-up companies
- Create networks and systems to connect entrepreneurs with each other and with venture capital
- Celebrate entrepreneurs and entrepreneurship
- Make information technology training required for post secondary students and accessible by all citizens (eliminate digital divide), celebrate educational successes
- Invest in telecommunications infrastructure
- Develop "buzz" about Minnesota 's technology, community awareness
- Restore state office of technology to cabinet level position
- Provide mentoring opportunities for young people, emphasize quality of life factors
- Aggressively train and education Minnesota's workers
- Involve whole community (ethnic groups, races, genders, social classes and regions)in discussion of issues
- Seed grant funds for entrepreneurs
- Explore leverage of digital broadcasting to increase Internet access
- Use technology to build community
- Scholarships to attract science and technology students from out of state
- Encourage telecommuting
- Encourage more corporate sponsored university research
- Encourage university researchers to innovate and develop strategies to commercialize resulting technologies
- Make education more market driven and promote life long learning
- Improve awareness and access to technology in inner city and rural areas
- Make government more accessible through technology

Two Roads Diverge: Analyzing Growth Scenarios for the Twin Cities Region. **Center for Energy and Environment, Minnesotans for an Energy Efficient Economy and 1000 Friends of Minnesota, 1999.** www.me3.org

Research sponsored by three environmental organizations and funded in part by the Legislative Commission Minnesota Resources, this study calculated the costs of two growth scenarios – smart growth and sprawl in terms of land used, infrastructure costs, open and agriculture land preserved, travel, air quality impacts and water supply and quality.

Metropolitan Council, *Maintaining Our Competitive Edge for the 21st Century: State of the Region,* 1999.

123 indicators about the economy, regional services, people and community, natural environment and Government Finance. To establish a framework for comprehensive, objective reporting on the state of the Twin Cities area and link measurable indicators with efforts of the Council. Trends are reviewed and questions posed about persistent poverty, shortage of labor, education and training for worker preparation and mismatch between location of unemployed job seekers and location of jobs (the limits of affordable housing and transit).

***Strategies for Economic Growth: Minnesota's Economic Development Investment Priorities*, Economic Development Association of Minnesota and 24 other local regional economic development groups and utilities, 1997.**

Survey of 1,000 economic development professionals and a number of focus groups with institutional leaders. Key areas included attitudes regarding importance and quality of workforce training, development incentives, livable wages and economic development programs and policies – probes about limits to economic growth such as land & buildings, tax policy and transportation.

Important factors identified include capital access, infrastructure, facilities/sites, work force availability, affordable housing, business climate/quality of life, Technology Support, business assistance and transportation. The top three issues were limited availability of workforce, limited availability of housing for workers and taxes and regulations.

Priorities

1. Establish an independent joint (business and government) Economic Policy Council – funded by endowment to prepare for state's long term economic prosperity, identify and guide investments in facilities and services.

2. Assure Workforce's ability to compete in global economy -- Revitalize role of University of Minnesota as leaders in education, research and technology transfer; clarify missions of state higher education systems and increase responsiveness to employers' needs; support life-long learning including (401k type account) for continuous career development; help with employment transitions/challenges (portable health and pension benefits, and personal safety net accounts); Invest in welfare reform and housing; support welfare to work initiatives; provide incentives to employers to hire recipients; support affordable housing in suburbs, tax rate reduction for multi-family and state level tax credit program for investments in low income housing; training, education and information to support career transitions; K-12 globally

competitive quality/performance standards; quality of life – sustain recreational and cultural amenities, focus on deteriorating neighborhoods and locations to use existing infrastructure

3. Set the pace of technological change to take full advantage of emerging improvements – technology curriculum and research investment at University of Minnesota and other Post-secondary schools, business industry collaborations, marketing technologies available for licensing, expand technology awareness by business, support business incubators, local capital formation for new business and new product development, enhance technology literacy of citizens invest in advanced facilities and training.

4. public infrastructure as foundation for economic growth – highway improvements, reverse commute, telecommuting and telework centers, maximize use/development of water/ports, air cargo and passenger facilities and rail-truck intermodal terminals, invest in brownfield cleanup support increased investment in technology infrastructure by state and local government

5. competitive taxes and regulations use outcome-based approaches at state and local level, reform property tax to reduce commercial and industrial rates, multi-family rates, redesign k-12 financing for broader support, remove sales tax on replacement equipment.

6. Seek continuous improvement in our economic development system and focus limited resources for maximum effect – target to opportunities, target to under performing areas, target to high growth sectors, recognize regional differences, support non-traditional entrepreneurs, continue to support industry recruitment and international trade, ensure accountability for public funds by establishing return on investment standards quality of jobs, community impacts, state and local tax generation, efficient use of existing infrastructure, strengthen networks of economic development professionals, identify resources to finance businesses – SCOR, angels, continue successful programs – Minnesota investment funds, revolving loan funds foster entrepreneurial economy and network with ideas, capital and support services.

Metropolitan Council and State and Local Policy Program Humphrey Institute, University of Minnesota *Twin Cities Industry Cluster Study,* 1995.

Harvard Business School professor Michael Porter's competitive advantage approach is explained and used to analyze Twin Cities industry. Porter's model uses four key determinants of competitiveness. The research team identified key advantages in the Twin Cities through focus groups with businesses in four industry clusters:

- Printing and publishing
- Computers and software
- Medical devices
- Machinery and metalworking

Factor Conditions

- Skilled work force – most important and biggest concern
- Innovative spirit – especially in early days of computer and medical device industries

- University of Minnesota – training for electrical engineers, innovative risk-taking physicians
- Infrastructure – good highways, air service and telecommunications
- Regulatory and fiscal policy –taxes and regulations are concerns – medical regulatory expertise may contribute to area's competitiveness

Home Demand
- Industrial Diversity – diverse economy offers niches for start-ups
- Big Corporations -- clients for small businesses source of talent for start-ups
- Quality and Productivity Improvement – demands of big business drive quality of suppliers

Related and Supporting Industries
- Industry Linkages – machinery linked to medical and computers, technology helps in computers, medical devices, and printing and publishing

Firm Strategy, Structure and Rivalry
- Cooperative competition – strong competition but willingness to share business with competitors

Recommendations

Training of labor force
- Improve linkages between business and post secondary institutions
- Publicize value and potential of high skills, technological occupations
- Revitalize role of University of Minnesota as Leader in education , research and technology transfer

Infrastructure
- Incorporate economic development considerations in transportation decision making – highways and freeways, hub city for air services with better direct routes to Far East.
- Enhance state of the art telecommunications – infrastructure and training

Industry-Based Strategies
- Promote industry-based economic development and regional cooperation – education and further research
- Facilitate industry-based cooperation and ongoing dialogue –discuss issues, share solutions

Industry-Oriented Tactics/Programs
- Occupation-specific training, technical assistance to firms
- Venture capital and financing programs for software developers
- Identify opportunities in national legislation such as NII
- Enhance state commitment to education technology in public schools and support regional market as vendors
- Enhance collaborative partnerships among health care providers, medical device manufacturers and public sector
- Promote university research as basis for industry application local medical device manufacturers
- Explore possibilities of attraction and/or encouraging start-up of pharmaceutical and biotechnology companies to Twin Cities

Starling, Elizabeth, *The Financial Services Cluster of the Twin Cities*, Metropolitan Council, 1995.

[illegible] Regional Economic Strategy for the Twin Cities Region.

Factor conditions
- Natural resources of region and transportation center of Twin Cities
- Group banking through local holding companies
- Hard working education workforce
- Comparative costs of operations

Home Demand
- Diverse economy
- Entrepreneurship and start-ups companies
- Households with higher than average incomes, comfort with new technologies and predilection toward saving and financial planning

Related and Supporting industries
- Easy access to professional services – accountants and attorneys
- Computer technology and software development

Firm strategy, structure and rivalry
- Strong local firms with intense competition
- Community involvement, customer service, product innovation and cost saving technologies

Government
- State restrictions on interstate banking and bank holding companies protected Minnesota banks from outside competition.
- Fiscal policy, especially commercial and industrial property taxes, affect markets and cost structure of finance industry most.

Recommendations
- Educational pipelines for work-ready labor force – basic literacy, mathematics, computers technology and work ethic
- State of the art telecommunication infrastructure – plan for competitive edge I future
- Commensurate, consistent and fair regulation – predictability and comparability with other state important to business customers.
- Accessible, affordable attractive and available office space – including a health public transit system, comparable commercial and industrial property taxes, desirable location – low crime areas, room for expansion.

Greater Minneapolis Chamber of Commerce, *Building Our Future: Regional Strategies for Economic Opportunities* – 1993-1995

Components of Economic Development:
- A capable and adaptable work force
- Investing in Minnesota's knowledge-based economy
- Public and private capital investments in enterprise development

- An infrastructure to move ideas and information
- An infrastructure to move people and products
- Tax and regulatory climate
- Preserving Minnesota's quality of life

Common concerns: Living on laurels of past/ complacency, hidden negative conditions in healthy economy – increasing poverty, deteriorated problem solving capability, particularly within regional context.

Goal: Increase job and ownership opportunities that enable individuals to support themselves, their households and their community as the Twin Cities area competes as one region in the global economy.

Strategies:
- Make the quality of the work force the region's *dominant competitive advantage*
- Concentrate *retention and expansion* efforts on businesses in which a significant proportion of jobs pay household-supporting wages
- Create a sustaining environment that nurtures the *formation of new businesses* and compels their future growth to remain in the region
- *Expand opportunities* for all those who want to work to gain entry into the regional economy, with as workers or entrepreneurs
- Find ways to bring Minneapolis, Saint Paul and the suburban communities together as interdependent partners in *one regional economy*.

26 tactics were put forth to achieve each strategy including increase work-bad learning, and other education/employer connections, 401K program for training, investment in regional adult training/retraining system, regional program and policies for human and physical infrastructure investment, legislative action on brownfield development, tax credits for R & D and high-tech businesses, regulatory reform, one-stop shop for permit and licenses, , create more small business incubators, employee training revolving loan fund, tax credits for training, business mentorship, build and support entrepreneurial support network, focus attention on unemployed and underemployed, use computerized bulletin board for job opportunities, encourage ESOPs – employee stock option plans, develop organizational model for regional economic development cooperation, incentive for school to work cooperation among institutions and agencies, make better use of labor market information and economic data and analysis to inform policies and programs, and public and private investment decisions.

Minnesota Business Partnership, *Enhancing Minnesota's Economic Competitiveness: An Industry-Specific, State-Specific Approach* (1992)

Analyzing 102 industry sectors and selecting 24 with high economic potential for Minnesota and comparing performance to the nation and selected states, the Partnership found:

- Strong overall economic growth and above average economic growth in manufacturing and high value service industries

- Slowing economic growth since 1987, relative to national patterns, growing faster than the nation in one third of high potential industries and slower in two thirds
- Losing ground to competing states.

High potential industries identified: Computers and office equipment, computer programming and data processing, medical ad dental labs, management and public relations, securities, medical instruments and supplies, credit reporting and collecting, miscellaneous publishing, direct mail, freight transportation arranging, miscellaneous business services, offices and clinics of medical doctors, sanitary services, wholesale professional and commercial equipment, misc. plastics, search and navigational equipment.

Recommendations include:
- Continuous assessment ongoing analysis and monitoring of performance of industries vis a vis other states to inform state policies and programs
- Detailed audit and comparison of economic policies in competing states, process of monitoring changes in coming years
- Study how state policies impact target industries.
- Conduct more detailed analysis of industries,
- Develop marketing strategies for high potential sectors
- Control government imposed costs of doing business
- Shift spending patterns to support high potential industries
- Private and public sectors work together to attract high potential industries

Place/Region	Twin Cities	Silicon Valley	Bay Area
Regional Group	**The Great North** www.greatnorth.com	**Joint Venture Silicon Valley** www.jointventure.org	**Bay Area Economic Forum** www.bayeconfor.org
Form of Organization	CEO leadership of business, academia and government	Non-profit network of business, education and community	Non-profit, public-private regional partnership of business, government, academic, labor and community leaders – partnership of Bay Area Council and association of Bay Area Governments
Mission	Provide regional civic leadership for community visioning, accountability, and results-oriented action that improves regional competitiveness, preserves core values and civic commitment, and sustains prosperity for all.	To identify and solve issues affecting the region to enable all people to succeed in the new economy	To foster an outstanding environment in the region for competitive economy to thrive and to enhance the overall quality of life in nine-county Bay Area.
Measurement Tool	***Opportunity Forecast*** – annual benchmarks for measuring progress	***Index 2000*** – measure progress toward 17 goals for 2010 for economy, environment, society and regional stewardship	***Winning in the Global Economy*** – examines economic performance of Bay area with comparable regional nationwide
Measures	**Results-**Prosperity, -Character, -Regional Drawing Power **Capacity of Innovation-**Research, -Commercialization, **-**Entrepreneurial Energy **Development Capacity** -Labor Force, -Infrastructure, -Economic Momentum	**Regional Trend Indicators**: • employment & wage growth **Progress Measures** • Innovative economy • Livable environment • Inclusive society • Regional stewardship	• **Personal Income/ Quality of Life** • Business Performance by region and cluster • Wealth creating infrastructure /environment (public and private investment and business climate)
Clusters	• Printing and publishing • Computers and software • Medical devices • Machinery and metalworking (from 1995 Met Council study)	• Computers/communication • Semiconductors and semiconductor equipment • Software • Defense/space • Innovation services • Professional services	• Computers and Electronics • Telecommunications • Multi-media • Banking and Finance • Environmental technology • Bioscience • Tourism
Recommen-dations/ Programs	• Scholarships • University Public-private R & D consortia focused on near-term commercial development of promising technologies	• Create solutions to affordable housing and escalating traffic congestion • Economic Prosperity through technology cluster companies • Achieve 21st Century Education • Health Community- Health Economy • Affiliate with Smart Valley, Environmental Partnership and Enterprise Network	• Attract private invest to revitalize poor neighborhoods with community • address "smart growth" • Alliance for sustainable development • Promote international trade • Demonstrate innovative technology on former military bases • Consortia to focus on critical role of region's research institutions in regional and national technology leadership • Market the region as premier business location • Stimulate multimedia industries • Support high speed water transportation

Place/Region	Pennsylvania	Philadelphia	Pittsburgh
Form of Organization	**Technology 21** Commission of senior executives from high tech companies appointed by Governor Ridge	**Philadelphia First** CEOs of 30 largest employers	**Pittsburgh Regional Alliance, Innovation Works, Inc., Heinz Endowments**
Mission/ Focus	To design a comprehensive technology strategy for Commonwealth	To improve business climate, generate employment by attracting new investments, to market region nationally and internationally. Prepared regional strategy , "Gaining the Lead in Global Economy" in 1995Pirrsburgh Regional Alliance is a collaborative of regional economic development organizations	Working to improve the region's business climate, market the region's assets for business growth and provide superior customer service for businesses investing in the region. The region divides functions of product planning, marketing and improvement among 4 public and private organizations.
Measurement Tool		***Regional Economic Benchmarks***	***Index of Entrepreneurial Pittsburgh*** See also series by Pittsburgh Gazette at www.post-gazette.com/benchmarks
Measures / Strategic Elements	Image Anchor Firms Venture Capital Workforce Business Climate Collaborations/Networking	Strategic Goals/ Regional Overview -Income opportunity index -Employment concentration index Strategic Industry Clusters -Economic growth and competitive factors Strategic Economic Assets -Air/rail -Entrepreneurship -University Science and Tech Base -Professional Workforce -Technical Workforce	
Clusters	• **Advanced Manufacturing** • **Advanced Materials** • **Agribusiness** • **Biotechnology** • **Environmental Technology** • **Information Technology**	• Professional services • Data-Intensive Services • Health Care Services and Products • Manufacturing • Hospitality	• Bioscience • Robotics • Software • High performance materials
Recommend-ations/ Programs	Marketing technology edge Create Catalyst Seed Fund Tax and Regulatory Climate Seamless Service Build technology communities Have technology ready workforce	Workforce development Regional marketing Public Policy Enhanced transportation system	"Hot team" to develop a strategy to retain top talent and attract venture capital

Place/Region	**Massachusetts**	**Washington D.C. area**
	Massachusetts Technology Collaborative www.mtpc.org	**Potomac Conference – PC** www.potomacconference.org **see also Potomac Knowledgeway – PK** www.knowledgeway.org
Form of Organization	Program of Massachusetts Technology Park Corporation – agency of commonwealth, MTPC 23 member board appointed by Governor representing senior officials from industry, academia and government	PC – project of Greater Washington Bd. of Trade PK – nonprofit leadership organization founded in 1995 business and academia.
Mission/ Focus	To foster sustainable economic growth by promoting a better understanding of the forces that shape the state's economy and by facilitating greater collaboration among the diverse enterprise comprise the Innovation Economy.	PC –"create a 'world class' connected community," to think collective about the future, foster closer relationships and trust among business and government leaders, set regional agenda that promotes cooperation, develops regional approaches for a healthy urban center and enhance the economic competitiveness of region
Measurement Tool	***Innovation Index***	PK - ***Toward a New Economy: Merging Heritage with Vision in the Greater Washington Area and "Regional Report Card"***
Measures/ Strategic Elements	**Results** – individual opportunity-competitiveness, business & cluster performance **Innovation Process** Idea generation, tech commercialization, entrepreneurship, business innovation **Resources** – human, technology, and investment resources	Education Innovation Inclusion Quality of Life Regional Thinking
Clusters	• Software/ Communication Services • Computer/Electronic • HealthcareTechnology • Innovation Services • Financial Services	**PC:** • Information and communications • BioScience • Cultural and hospitality • Professional Service and Public Policy **PK –** InfoCom Cluster: -Communications and content companies,-Computing and system integration , -Internet Service industries
Recommend-ations / Programs	Created Mass MEDIC a business council to promote interest of medical device industry Advocate for increased federal R & D funding Prepare Index of Innovation Economy and host annual innovation summit Advocate for better telecommunication infrastructure Create Engineering in Mass Collaborative to increase number of engineering students Municipal and business leaders create I-495 Corridor Initiative to address environmental, transportation, labor force and waster water treatment issues. Direct major renewable energy initiative	PC – hosts two session per year Regional marketing and strategic Economic Development program Develop Community Business Partnership Work with transition of RIF'ed federal workers Legislation for regional transportation authority Blueprint for Economic Development to support fair and equitable federal payment for City of Washington, construction new convention center and examining regional funding for regional facilities PK - Workforce development Education Network Development

Place/Region	**Chicago**	*Seattle*	*Georgia*
	Chicago Metropolis 2020 www.chicagometropolis2020.org	**Washington Technology Center** www.watechcenter.org	**Georgia Research Alliance** www.gra.org
Form of Organization	Formed in 1999. ½ Chicago Commercial Club ½ government, community, labor and faith	Established in 1983, university and industry board of directors	Founded in 1990, a non-profit with reps. from business 6 universities and state -
Mission/ Focus	To foster collaborative action to strengthen economic vitality and quality of life in the 6 county region and to make region one of the places in the world where people most want to live and work.	To help Washington companies succeed in development of commercially viable technology, facilitate university-industry R & D partnerships, enhance technology transfer statewide	Georgia will be ranked among the top tier of state in the nation in terms of a technology-driven state economy by the year 2010.
Measurement Tool	***Chicago Metropolis 2020: Preparing Metropolitan Chicago for the 21st Century*** plan	***Index of Innovation and Technology***	
Measures/ Strategic Elements	**Education** – invest in children Government – reform governance and taxation **Land use and housing** – sprawl and concentrations of poor minorities **Transportation** – transit and intermodal investments **Economic Development** –workforce development, inner-city competitiveness, high tech center, brownfield redevelopment, economically disadvantaged neighborhoods, create database and use for 21st century strategy for competitiveness, position region for entrepreneurs, market city's livability	**Innovation** **Competitiveness** **Growth** **Financial Capacity** **Human Potential** **Quality of Life**	
Clusters		Advanced materials/manufacturing Biotech/Biomedical instrumentation Computer systems Microelectronics	Biotech Advanced Telecom Environmental Technologies
Recommen-dations / Programs	**Lead strategy and consensus building process:** • Identify research needs and contract with appropriate institution • Create outreach program build awareness and support • Establish task forces for issues • Build coalitions for support recommendations **Annual Regional Report Card** Develop legislative reform and private sector proposals	• Link companies with research expertise • State funding for collaborative industry /university research • Stimulate entrepreneurial start-ups • Outreach to industry from 3 universities	• Endowed Chairs at Universities • R & D Infrastructure Investments facilities and equipment • Technology Development partnerships: 1)Proof of concept 2) Applied R & D • public policy forums • venture capital /entrepreneur forums • research forums

Leading Technology States for Benchmarking Massachusetts Performance

EMPLOYMENT CONCENTRATION							
State	Software	Computer / Electronics	Healthcare Technology	Innovation Services	Financial Services	1999 Selection	No. of clusters above 1.1
AZ	0.87	1.96	0.59	0.97	0.79		1
CA	**1.32**	**2.15**	**1.50**	**1.21**	**0.93**	**X**	**4**
CO	**1.84**	**1.90**	**1.22**	**1.39**	**0.99**	**X**	**4**
FL	0.93	0.75	0.96	0.91	0.96		0
IL	0.89	0.94	1.02	1.01	1.23		1
MA	**1.51**	**2.14**	**1.97**	**1.63**	**1.67**		
MI	0.73	0.24	0.78	1.06	0.74		0
MN	**0.90**	**1.82**	**1.39**	**0.65**	**1.13**	**X**	**3**
NJ	**1.61**	**0.64**	**2.25**	**1.13**	**1.39**	**X**	**4**
NY	**0.99**	**0.76**	**1.12**	**1.02**	**1.85**	**X**	**2**
PA	0.80	0.65	1.07	1.24	1.10		2
TX	**1.12**	**1.28**	**0.71**	**1.11**	**0.85**	**X**	**3**
WA	1.04	0.89	0.76	1.09	0.83		0

Collaborative Economics and Massachusetts Technology Collaborative, ***Index of the Massachusetts Innovation Economy***, 1999, p. 52.

Other ratings of Minnesota's economy:

The 1999 Minnesota Report Card of the Corporation for Enterprise Development can be found at: http://209.183.252.135/reportcards/pdf/sp_mn.pdf

To see its standing with other top states on the CFED Report Card 1999 Honor Roll go to http://209.183.252.135/honorroll/index.html

For Minnesota's rating among the state in the Progressive Policy Institute's ***New Economy Index*** go to http://www.neweconomyindex.org/states/minnesota.html